Amendments to the Claims

Please replace the claims as filed with the claims set forth below. This listing of claims will replace all prior versions, and listings, of claims in the application:

1-21. Cancelled.

22. (Currently Amended) A detection system comprising:

a light emitting diode (LED) comprising at least one (semi)conductive electroluminescent active layer comprising at least one electroluminescent organic compound, which at least one electroluminescent organic compound ~~active layer~~ provides for the simultaneous emission of at least two intensity maxima of different wavelengths of light, the simultaneous emission further comprising a reference signal comprising light emitted at a wavelength corresponding to one of the at least two intensity maxima and a detection signal comprising light emitted at a wavelength corresponding to another of the at least two intensity maxima; and

a detector comprising a signal channel configured to detect the detection signal and a separate reference channel configured to simultaneously detect the reference signal in optical communication with the LED.

23. (Previously Presented) The detection system according to claim 22, wherein the LED comprises an electroluminescent compound selected from a group consisting of electroluminescent polymers, electroluminescent oligomeric dyes and electroluminescent single dyes.

24. (Previously Presented) The detection system according to claim 22, wherein the LED comprises an electroluminescent polymer and an electroluminescent single dye.

25. (Currently Amended) The detection system according to claim 22, wherein the at least two different intensity maxima of the different wavelengths are emitted by a first and a

second organic electroluminescent compound, wherein the first organic electroluminescent compound has a maximum in the emission spectrum at a different wavelength than the second compound.

26. (Currently Amended) The detection system according to claim 22, wherein the at least two different intensity maxima of the different wavelengths are emitted by one organic electroluminescent compound.

27. (Previously Presented) The detection system according to claim 26, wherein the compound is selected from a group consisting of copolymers having at least two different electroluminescent segments, electroluminescent polymers derivatized with at least one electroluminescent dye, and non-electroluminescent compounds, derivatized with at least two different electroluminescent dyes.

28. (Currently Amended) The detection system according claim 22, wherein at least one electroluminescent compound is selected from a group consisting of ~~poly(paraphenylene vinylene) compounds,~~ polyfluorene compounds, copolymers of said polyflorene compounds ~~polymers~~ and polymers derivatized with one or more of said dyes.

29. (Previously Presented) The detection system according to claim 22, wherein the emission spectrum of the LED is bimodal.

30. (Previously Presented) The detection system according to claim 22, wherein the difference in wavelength between two consecutive maxima in the emission spectrum of the LED is at least 40 nm.

31. (Previously Presented) The detection system according to claim 22, wherein the LED's emission spectrum has at least one maximum, preferably at least two maxima, in the wavelength range of 190-1500 nm, preferably of 400-800 nm.

32. (Previously Presented) The detection system according to claim 22, wherein the intensity ratio between two consecutive maxima in the emission spectrum is in the range of 0.5 to 1.

33. (Previously Presented) The detection system according to claim 22, wherein in the emission spectrum the peak to valley ratio of the first and the second maximum is at least 2.

34. (Previously Presented) The detection system according to claim 22, wherein the LED comprises a filter.

35. (Previously Presented) The detection system according to claim 34 wherein the LED comprises a filter with notch filter properties, which filter selectively has at least a reduced transmission of light of a wavelength between two consecutive intensity maxima.

36.-41. (Cancelled)

42. (Previously Presented) The detection system of claim 22 wherein the detector comprises at least one photodiode for each of said channels.

43. (Previously Presented) The detection system of claim 42, wherein the photodiodes are polymeric photodiodes.

44. (Previously Presented) The detection system of claim 22, wherein the detection system comprises a sample portion in which or on which a sample is present during detection.

45. (Previously Presented) The detection system of claim 44, wherein the sample portion comprises a coating which is capable of interacting with a component to be measured, so that an absorption property, a fluorescence property or a refractive index of the coating changes upon interaction.

46. (Previously Presented) The detection system of claim 45, wherein the coating is suitable for interacting with a component selected from the group of polar vapors, non-polar vapors, CO_2 and ammonia.

47. (Previously Presented) The detection system of claim 22, wherein the light emitting diode and the detector are present on or in a carrier material, wherein the carrier material is flexible.

48. (New) The detection system according claim 22, wherein at least one electroluminescent compound is selected from a group consisting of poly(paraphenylene vinylene) compounds, polyfluorene compounds, copolymers of said polymers and polymers derivatized with one or more of said dyes.

49. (New) The detection system according to claim 22, wherein at least one electroluminescent compound is selected from the group of polyacetylene compounds, polythiophene compounds, polypyrroles, polyanilines and copolymers of these polymers.

50. (New) The detection system according to claim 22, wherein the detection system is a miniaturized sensor system.

51. (New) The detection system according to claim 50, wherein the detection system is integrated on a chip.